

Funafuti, where it is not common, being found only in the south-western corner of the island.

Lastly, while at Fiji, Mr. Gardiner had the good luck to shoot a specimen of the rare *Leptornis viridis*, and has brought it home well preserved in spirit. He observed three of these birds at Taviani in a crater-like depression, 2200 feet above the sea-level, surrounded by swamp overgrown with trees. He distinctly denies the correctness of Liardet's report that these birds "creep" on trees (*cf.* Layard, P. Z. S. 1875, p. 432).

P.S.—I take this opportunity of respectfully answering the following remark of Count Salvadori, which I have recently noticed in *Cat. Birds*, vol. xxvii. p. 495, anent *Crypturi*:—"Dr. Gadow defines the *Tinamiformes* . . . and places them between the *Falconiformes* (!) and the *Galliformes*." The fact is, I do no such thing. Both groups not only belong to different "Regions," but even to different "Brigades" of my System. How would the justly-renowned Italian authority relish the analogous statement that he "places the *Crypturi* between the *Chenomorphæ* (!) and the *Ratitæ*," or "near the *Goosanders*"?—H. G.

III.—*On the Terrestrial Attitudes of Loons and Grebes.*

By DR. R. W. SHUFELDT, C.M.Z.S.*

My attention has recently been invited by Mr. H. H. Brimley, the Curator of the State Museum of Raleigh, North Carolina, to an interesting question in regard to the normal attitudes assumed by the Loons and Grebes (*Pygopodes*) when removed from their natural element, the water, and placed upon dry land or elsewhere, and to the mode of locomotion of these birds when on shore.

In a letter to the present writer, Mr. Brimley says:—

"The snowstorm of three weeks ago brought an unprecedented influx of Loons into this locality, several of which came into my hands. One I had alive for a short time, and

* On this subject see *Bull. B. O. C.* vi. p. xxiv.

I studied it for attitudes ; but, do all I would, it absolutely refused to sit upright, or to assume anything approaching the 'book' attitude attributed to Loons and Grebes. Its method of progression was by little jumps, both feet being moved backward together, the breast never leaving the ground. When at rest the body lay flat on the breast-bone, and the bird seemed to have no idea of any other attitude when on shore. I questioned, also, a man who had handled another captive, and his specimen acted in the same way.

"Now, I am unfamiliar with either Loons or Grebes on land, and what I want to know is—Is the common upright attitude given to these birds, both in pictures and mounted specimens, incorrect and not assumed by them in life? I have always used the upright attitude in mounting (excepting for the one that would not assume it), and I would like to know the facts in the matter, which I have no doubt you can give me."

In my answer to this, I stated that, so far as my own observations were concerned, they agreed with what my correspondent had noticed, and so well described in the above letter. In my opinion it is the rare exception for either a Loon or a Grebe, when out of the water and on *terra firma*, to assume the erect attitude, as is the habit in the case of the Penguins and the Auks. That they may do so momentarily, upon certain occasions, there can hardly be any question, and especially at such times when they desire to agitate their plumage after a general preening, as we frequently see Ducks and other wildfowl do ; but that when on land they habitually stand erect, I believe to be erroneous. Suggestion was made to Mr. Brimley that he should take photographs of his specimens of living Loons under as natural conditions as possible, and particularly when the birds thought themselves unnoticed and were in their normal positions of rest. An opportunity is offered here to add facts of interest to a question that, to my knowledge, has never yet been satisfactorily settled by ornithologists.

Audubon, who was altogether too prone to figure his birds in extravagant attitudes, often represented the Loons and

Grebes he drew upon shore, and in doing so gave them both the erect attitudes, as well as, what may be termed, the ventropodal ones. His figures have been very extensively copied, and are doubtless largely responsible for the "book" attitudes, to which Mr. Brimley refers. On the other hand, Wilson, who portrayed his subjects more in keeping with the demands of strict ornithological science, figured his Great Northern Diver in the act of swimming, and this figure fortunately has been very extensively reproduced by Coues and other popular ornithologists. A typical example of figuring a Grebe in a thoroughly erect pose may be seen in the case of the Great Crested Grebe (*Podiceps cristatus*) that illustrates the article "Grebe" in Professor Newton's 'Dictionary of Birds,' and another, in the case of the "Loon," in Michelet's work 'L'Oiseau.' The female bird, however, in the latter has the ventropodal attitude. And so it goes all through the literature of the Class, and has been even carried into the osteology of long-extinct pygopodous birds, for Marsh, in his restoration of the *Hesperornis*, makes the skeleton of that ancestral type of Divers stand up as erect as any Dabchick that illustrates works on popular zoology for our public schools. When Loons and Grebes go on shore it is rarely for any other purpose than to breed, and they never leave the water's edge but for very short distances—usually less than fifty feet. In our western rivers, the Great Northern Diver is frequently seen to pass out of the water on to the sand-bars, where he will stretch himself out in the ventropodal position to enjoy the warm sun and the complete rest from aqueous locomotion. At these times they are never seen to assume the erect attitude, except when they raise up in that position to vigorously fan with their wings for an instant or two. This attitude is beautifully represented in the case of the male Black-throated Diver in the group exhibited in the South Kensington Museum, and so accurately figured in Dr. Sharpe's excellent article in 'The English Illustrated Magazine' for December 1887 (p. 170), on "Ornithology at South Kensington." That is a most life-like group, and represents both the

specimens in it in normal postures, and the ones commonly assumed by not only this species, but all the true *Pygopodes*.

If it be true that these birds do not habitually assume the erect attitude on solid ground, then it would be a nice problem to discover the exact reason why they can not, and the Auks and Penguins can, and by nature do. Certain conformations of particular parts of the skeleton, and the action and arrangement of certain muscles and tendons, with all bearing upon the question of the general adaptation to sustain the proper equilibrium when erect, would be factors to be considered here.

Passing from drawings to descriptions, it is to be noted that Audubon states that both Loons and Grebes have the power of running, walking, and standing erect. A Great Northern Diver, when wounded, rapidly made off by running in nearly an upright attitude; while the Horned Grebe, when on the ground, "is not better off than the Dabchick, it being obliged to stand nearly erect, the hind part of the body resting, and the tarsi and toes extended laterally." He figures the male of this species about in this attitude; and I have mounted the same bird so, although I have never seen them thus stand in nature.

According to Professor Newton, "when young Grebes are taken from the nest and placed on dry ground, it is curious to observe the way in which they progress—using the wings almost as fore-feet, and suggesting the notion that they must be quadrupeds instead of birds" (*Ibis*, 1889, p. 577).

I have always noticed the old ones to behave in this manner when placed upon the ground. The late Professor J. W. P. Jenks, of Brown University, a very close observer of the habits of birds for half a century, says of the Loon that it is "unable to move on land, except by a constant succession of awkward tumbles," or in the attitude that Audubon has figured the male of the Eared Grebe in the act of walking upon the land, or his female of the Horned Grebe. The latter he represents in the ventropodal posture, although in the descriptive text he says that this

species, when on land, is "obliged to stand nearly erect." Consistency in ornithology, as everywhere else, is a priceless jewel.

I find little or nothing about the behaviour on land of either Loons or Grebes in the very elaborate Reports upon the ornithology of the United States published at various times under the auspices of the Government by Henshaw, Nelson, Turner, Coues, and others. Practically there is nothing. However, in one instance, Mr. Nelson describes the mode of progression of the Black-throated Loon (*Urinator arcticus*), and he says: "On one occasion I came suddenly upon one of these birds in a small pool, and the bird, seeming to appreciate the uselessness of trying to dive, tried to take wing, but fell upon the grass only a few feet from the water. Hoping to capture the bird alive, I pursued it at full speed as it progressed toward a neighbouring pond. The bird advanced by raising the fore part of the body by pressing downward with the wing-tips, and at the same time, by an impetus of wings and legs, threw the body forward in a series of leaps. In spite of my efforts, the bird distanced me in a race of about 30 or 40 yards, and launched into a larger pond"*. I have had several experiences of this kind with both Grebes and Loons, and in every instance the birds behaved in the same manner as in the chase just described so well by Mr. Nelson. It also agrees with the observations given above by Mr. Brimley in his letter; and another trustworthy authority at my hand says of the Red-throated Diver, "their legs are placed so far behind that they cannot walk upon them; still they shove themselves along on the ground by jerks, rubbing the breast on the ground. They make a regular path from the water to their nests."

I have seen in their natural haunts a great many Loons and Grebes during my lifetime, but have yet to live to see them habitually stand erect on the shore, as Penguins, and Auks, and Cormorants are well known to do. Perhaps other field-

* 'Report on the Natural-History Collections made in Alaska between the years 1877 and 1881,' p. 37.

naturalists have been more fortunate ; but surely, in face of the almost complete absence from ornithological literature of the accounts of the behaviour of these birds on land, the observations of these others will hardly come amiss.

IV.—*On some Birds and Eggs lately collected at Cape York, Queensland, by Mr. H. G. Barnard.* By D. LE SOUËR, Melbourne.

(Plate I.)

1. *TALEGALLUS PURPUREICOLLIS* sp. nov. Cape York. (Barnard's *Talegallus*.)

This species is found in the Cape York Peninsula. Mr. K. Broadbent observed it during his extended visit there some years ago. Mr. Jardine, of Somerset, Cape York, and Mr. H. G. Barnard have lately noticed the variation between it and the southern form, and the latter has kindly sent me some skins. The principal difference between the two birds is in the coloration of the lower portion of the neck and wattles, which in *Talegallus purpureicollis* (the name by which I propose to call it) is of a purplish white, and in *Talegallus lathamii* red, with yellow wattles. Otherwise the birds are very similar : but, as Mr. H. G. Barnard says, "anyone who has seen the bird in life will at once observe the difference." The bright colours soon fade on the death of the bird, and the difference is not then so noticeable, although it can still be observed. During the breeding-season, from October until January, the wattle of the male is $1\frac{1}{2}$ inch in length, hanging from the lower portion of the neck. When the breeding-season is over the wattle shrinks and disappears ; it is then more difficult to tell the male from the female when seen in the scrub.

The total length of the adult male is 29 inches, wing 16 inches, and leg 11 inches. Its head and upper portion of the neck red, lower portion of the neck, with wattles, whitish purple ; eyes very light brown, almost white ; bill black ; feet and legs dark brown ; the upper surface is blackish